

Appln. S.N. 10/696,447
Amdt. dated December 19, 2006
Reply to Office Action of September 19, 2006
Docket No. 100204750-1

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REMARKS

The Office Action of September 19, 2006 has been received and carefully reviewed. It is submitted that, by this Amendment, all bases of rejection are traversed and overcome. Upon entry of this Amendment, claims 24-41 remain in the application. Claims 1-23 and 42-48 have been cancelled herein without prejudice. Reconsideration of the claims is respectfully requested.

The Applicants hereby affirm the provisional election of Group II (claims 24-41) that was made, with traverse, by David Collins on September 7, 2006 via a telephone conversation with the Examiner.

Claims 40 and 41 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. The Examiner states that a claim including a method of using a fuel cell and a method of making an electrode or electrolyte is indefinite.

Applicants respectfully disagree with the Examiner. However, in order to expedite prosecution, the Applicants have amended claim 40 to recite a method of using the fuel cell as defined in claim 24. Applicants submit that this amendment clarifies that the method of using the fuel cell is in fact the subject matter of claim 40, and respectfully request withdrawal of the rejection under 35 U.S.C. 112, second paragraph.

Claims 24-37 stand rejected under 35 U.S.C. 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as being obvious over Gopalan et al. (U.S. Patent No. 6,492,051). The Examiner states that Gopalan teaches a fuel cell including an air electrode, an electrolyte, a fuel electrode, and an interlayer. The Examiner further states that the interlayer includes a two phase mixture of particles: 1) yttria stabilized zirconia or doped cerium oxide and 2) doped lanthanum manganite and an organic binder. The Examiner notes that the claims are product by process claims, and that the product itself does not depend on the process of making it.

Applicants respectfully take issue with the Examiner's conclusion that the fuel cell of Gopalan anticipates or renders obvious Applicants' invention as defined in claims 24-37. Gopalan does teach a two-phase mixture of particles as an interlayer between the electrode and the electrolyte. Gopalan, however, does not teach that the interlayer is a thin solution-based metal oxide film, as recited in Applicants' claims. In fact, Gopalan *teaches away* from

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the interlayer being a metal oxide film by stating, "the interlayer will **always** be at least a **dual phase system** containing a combination of 20 wt % to 80 wt % of at least one type of electrolyte, preferably 8% to 10% yttria stabilized zirconia, with 20 wt % to 80 wt % of at least one type of electrode particles, preferably a doped lanthanum manganite" (emphasis added, see Col. 5, lines 3-8). This statement clearly teaches that the interlayer ***always*** includes 1) 20 wt% to 80 wt% of scandia stabilized zirconia, yttria stabilized zirconia or doped cerium oxide, and (2) 20 wt% to 80 wt% of doped lanthanum manganite, doped lanthanum chromite or platinum. As the interlayer of Gopalan ***always*** contains this type of dual phase system, it is submitted that such a layer does not anticipate or render obvious a metal oxide film.

For all the reasons stated above, it is submitted that Applicants' invention as defined in claim 24, and those claims depending ultimately therefrom, is not anticipated, taught or rendered obvious by Gopalan, either alone or in combination, and patentably defines over the art of record.

Claim 38 stands rejected under 35 U.S.C. 103(a) as being obvious over Gopalan et al. in view of Borglum et al. (US Patent No. 6,139,985). The Examiner states that Gopalan does not teach a metal oxide film that has a thickness as recited in claim 38. The Examiner further states that Borglum teaches a CeO₂ film having such a thickness.

In light of the fact that the Gopalan reference teaches a dual phase system, and *teaches away* from a metal oxide film, it is submitted that one skilled in the art would not be led to combine Gopalan with Borglum, which is directed to a cerium oxide film incorporated into the fuel cell.

In order to more particularly point out and distinctly claim the subject matter that Applicants regard as the invention, Applicants have also amended claim 24 (from which claim 38 depends) to recite that the at least one electrode and electrolyte includes a solution-based metal oxide film. Support for this recitation may be found throughout the specification as filed, at least at page 7, line 27 through page 8, line 2.

In sharp contrast to the solution-based metal oxide film as recited in Applicants' amended claim 24, Gopalan teaches a dual phase system, and Borglum teaches a vapor-deposited cerium oxide film.

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For all the reasons state above, it is submitted that Applicants' invention as defined in claim 38 is not anticipated, taught or rendered obvious by Gopalan or Borglum, either alone or in combination, and patentably defines over the art of record.

Claims 39-41 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Gopalan in view of Ishihara et al. (U.S. Patent No. 5,175,063). The Examiner reiterates the arguments made in regard to the teachings of Gopalan, but admits that the reference does not teach an electronic device including a load and a fuel cell. The Examiner states that the Ishihara teaches a fuel cell generator including a SOFC element array connected to a load. The Examiner concludes that it would have been obvious to connect the Gopalan fuel cell to a load.

Applicants reiterate the arguments regarding the Gopalan reference, and submit that Ishihara does not supply the deficiencies of Gopalan. The combination of the references does not teach or render obvious a solution-based metal oxide film as recited in Applicants' claim 24.

In summary, claims 24-41 remain in the application. It is submitted that, through this amendment, Applicants' invention as set forth in these claims is now in a condition suitable for allowance. Further and favorable consideration is requested. If the Examiner believes it would expedite prosecution of the above-identified application, the Examiner is cordially invited to contact Applicants' Attorney at the below-listed telephone number.

Respectfully submitted,

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